Remarks

The Examiner's reconsideration of the application is urged in view of the amendments above and comments which follow.

Turning first to the claim objections, claims 1, 4 and 12 have been appropriately amended, and claim 26 has been cancelled. It is therefore submitted that all claims are now in appropriate form.

The Examiner rejects Claim 1 of the present application under 35 U.S.C. §103 as being unpatentable over Hama (US2004/0202171) in view of Arndt (US 5,708,654). Reconsideration is requested.

Hama discloses a VPN comprising customer edge (CE) devices each having a provider edge (PE) interface.

Paragraph 30 of Hama, pointed out by the Examiner, indicates that a unique VID (or VLAN ID) is assigned to each customer in order to allow data transmissions between several enterprise groups, for instance (see also paragraph 29). This configuration suggests that each PE interface supports only one layer 2 virtual circuit for communication with remote CE devices. In other words, only one layer 2 virtual circuit is provided with respect to a given CE (customer) device.

There is no suggestion, in Hama, for providing a multiplex of layer 2 virtual circuits for communication with remote CE devices with respect to a given CE device (see figure 1 for instance), although several layer 2 virtual circuits could be presented to a PE device (with respect to respective CE devices).

Moreover, Arndt mentions the ARP protocol in its background section. According to this protocol, an ARP request is broadcast to all devices on a local segment of a LAN, which requests that the device having a particular target IP responds with its MAC address. A mapping of the IP address of the target device to its MAC address is thus achieved (col.2, l.22-31).

But in the case of Arndt, the ARP request is sent from a source device, which is a device of a single LAN, and the ARP response is received at said source device.

In contrast, the present invention, as claimed in Claim 1, requires an address resolution request message to be sent through a PE interface over each layer 2 virtual circuit of a multiplex. This differs from the case of Arndt, since several VLANs are involved.

In addition, the layer 3 address of the relevant remote CE device is mapped to the one of the layer 2 virtual circuits on which a response is received. Such mapping is less natural than the one mentioned in Arndt where the ARP response is received at the device of the single LAN which has sent the ARP request. There is no need, in Arndt, to check on which circuit the ARP response was received.

The address resolution method as claimed in Claim 1 of the present application would thus not have been suggested by the teaching of Arndt, due to the fact that the context of Arndt is much simpler, in particular because no multiplex of layer 2 circuits is present (a single LAN is disclosed).

As mentioned above, Hama also does not disclose a multiplex of layer 2 virtual circuits with respect to a CE device.

One skilled in the art would thus not have been able to meet the subject-matter of Claim 1 of the present application from the teachings of Hama and/or Arndt. The subject-matter of Claim 1 is thus believed new and non obvious over Hama in view of Arndt. The same applies to Claims 11, 20 and 25. The other claims are submitted to be allowable, as well, in particular since they depend on an allowable independent claim, directly or indirectly.

In view of the foregoing, it is submitted that this application distinguishes from the prior and is allowable thereover. The Examiner's further and favorable reconsideration in that regard is urged.

February 24, 2006

Respectfully submitted,

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